U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket/Report No.	50-277/90-18 50-278/90-18	License No.	DPR-44 DPR-56

Licensee: Philadelphia Electric Company
Peach Bottom Atomic Power Station
P. O. Box 195
Wayne, PA 19087-0195

Facility Name: Peach Bottom Atomic Power Station Units 2 and 3

Dates: September 25 - October 29, 1990

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Areas Inspected:

The inspection included routine, on-site regular, backshift and deep backshift review of accessible portions of Units 2 and 3. The inspectors reviewed operational safety, radiation protection, physical security, control room activities, licensee events, surveillance testing, engineering and technical support activities, and maintenance. In addition, the inspectors performed a review of implementation of the Inservice Testing Program for pumps and valves.

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EXECUTIVE SUMMARY

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Plant Operations

The inspector noted two discrepancies in the Unit Control Room Operator's Shift Turnover Record. A log listed as being reviewed upon assuming shift duty no longer existed but was being initialed as having been reviewed, and a discrepancy in the Operations Management Manual concerning tracking of annunciator mode switches positions was noted. Operations personnel quickly responded to the concern and initiated appropriate corrective action.

Cold weather preparations by the licensee were reviewed and found to be well underway. Most of the maintenance items were complete and no safety-related items were open.

Radiological Controls

Licensee preparation for and conduct of diving operations in support of the rerack of the Unit 3 spent fuel pool were found to be well controlled and conducted.

Maintenance and Surveillance

A review of licensee implementation of the Inservice Testing Program (IST) was performed. The inspector found that while many attributes of an effective IST program had been established, weaknesses were evident. One violation with three examples for failure to adequately implement provisions of the IST program as required by the ASME Code was identified. Other weaknesses requiring follow-up by the licensee, including missed performance of an IST test, were also noted.

Additional review of the Unit 3 reactor vessel water level monitoring event, previously discussed in Inspection Report 90-17, indicates that the process applied to review and disposition of maintenance requests was a significant contributing factor.

Assurance of Quality

The licensee has undertaken an initiative to evaluate and correct problems with personnel attention to detail. This effort includes formation of a special task force, and significant senior management involvement and sponsorship.

DETAILS

1.0 PLANT OPERATIONS REVIEW (71707, 71714)

The inspector completed NRC Inspection Procedure 71707, "Operational Safety Verification," by directly observing activities and equipment, touring the facility, interviewing and discussing items with licensee personnel, independently verifying safety system status and limiting conditions for operation, reviewing corrective actions, and examining facility records and logs. The inspectors performed 83 total hours of on site backshift inspection, including 10 hours of deep backshift and weekend tours of the facility.

1.1 Operational Overview

Unit 2 began the inspection period at 80% power. Power had been reduced due to high feedwater copper concentrations. On September 30 power was reduced to 60% to leak test condenser water boxes. Power was returned to 100% on October 3 and remained at 100%, except for brief periods to adjust rod patterns, until the end of the inspection period.

Unit 3 began the inspection period at 100% power. Power was reduced to 80% on October 14 to perform modification acceptance testing for the control room computer upgrade. Power was returned to 100% the next day and remained there until October 24. Due to recombiner problems, power was reduced and held at 80% until the unit was shutdown for the mid-cycle outage on October 27. The unit remained in cold shutdown through the remainder of the period.

A detailed chronology of plant events occurring during the inspection period is included in Attachment I.

1.2 Control Room Observations

On October 9, 1990, during a control room tour the inspector questioned operators concerning the location of the Main Control Room Annunciator Status List. The Unit Reactor Operator Shift Turnover Record contains a check-off for review of this list after an operator assumes the shift. The list could not be located. The inspector also questioned the Shift Manager concerning the status of Annunciator Mode Switch Position Log. The Shift Manager was unclear as to the status.

The Operations Support Engineer stated that when the Main Control Room Annunciator Status List was discontinued about 6 months ago, its check-off on the Turnover Record was not deleted. The Annunciator Mode Switch Position Log was created to track mode switch position when the alarm response cards were being revised into alarm response procedures. This conversion has been complete for some time and the log was supposed to have been discontinued at that time.

For corrective action, operators began to N/A the check-off for the review of the Main Control Room Annunciator Status List. A revision of the turnover record was initiated to delete the check-off. Operations support personnel also began a review of the annunciator mode switch position log to ensure that all remaining entries were captured in the alarm response procedures. When this is complete, the log and its reference in the Operations Management Manual will be deleted. The inspector had no further questions.

1.3 Cold Weather Preparations

The inspector reviewed the licensee's program of protective measures for cold weather. The inspector reviewed Routine Test (RT) 6.0, "Winterizing Procedure," Revision 6. Implementation of the procedure should be completed by the end of November each calendar year.

The inspector determined that RT 6.0 was started by operations on September 29, 1990. By the close of the inspection period most of the procedure was complete. Thirty-nine maintenance items were noted. Most of the items were repaired or working. Others had appropriate dispositions.

The inspector walked-down several outdoor structures and verified the accuracy of maintenance items listed in RT 6.0. The inspector determined that no safety-related maintenance items related to the cold weather preparation procedure were open. The inspector had no further questions.

1.4 Reportability Issues

During planned and unplanned scrams from power, both Peach Bottom units normally receive a primary containment isolation system Group II/III isolation. These isolations affect auxiliary systems (reactor water cleanup, shutdown cooling) and ventilation systems (reactor building, standby gas treatment). When returning reactor water cleanup (RWCU) to service following system depressurization, both Peach Bottom units normally receive a high flow isolation.

In both of the above instances, the licensee is considering performing modifications to reduce or eliminate these unnecessary engineered safety feature (ESF) actuations. For the first case, a setpoint change is being considered to increase the margin to the Group II/III isolation by 48". For the second case, a time delay is being considered for the high flow isolation.

However, the licensee has recently taken a position that these events above are not reportable. They have based their position on the guidance available in 10 CFR 50.72 and 73, and in NUREG-1022. PECo contends that these events are expected responses to the operational evolution being conducted, and are addressed at the proper point in their procedures. The inspector discussed this with cognizant NRC headquarters personnel and no concerns were identified at this time.

2.0 FOLLOW-UP OF PLANT EVENTS (93702, 90712)

During the report period the inspectors evaluated licensee staff and management response to plant events to verify that root causes were identified, appropriate corrective actions implemented and required notifications made. Events occurring during the period are discussed individually below.

2.1 Unsealed Penetration in Unit 3 Pump Structure

On September 24, 1990, PECo informed the NRC of an unsealed penetration in the Unit 3 high pressure service water (HPSW) pump bay at elevation 123'. This is below the design 135' external flood protection level. Due to the unsealed penetration, a potential common mode failure of the HPSW and emergency service water (ESW) pumps existed. PECo determined that the HPSW and ESW pumps remained operable. This was based on their assessment that the significant length of time that would elapse before a flood reached the opening would allow installation of a flood seal.

Two questionable penetrations in external flood barriers were previously identified by PECo as a result of a review of facility modification packages. Combined Inspection Report 50-277/90-17;50-278/90-17 documented these findings. After identifying these questionable penetration seals PECo began a review of pump bay structural drawings to assess the potential for the existence of other inadequate seals. As a result of this review penetration CW3-112-143-2015 was identified as potentially having an inadequate seal. A physical examination by PECo engineering determined that no seal was in place. This penetration was made of a 4 1/2" diameter wall sleeve capped at both ends with 3/4" conduit reducers. The conduit connected to the penetration provided a path from a lighting panel in the pump bay to an external lighting device.

Maintenance Request Form (MRF) 9006846 and Non-Conformance Report (NCR) P-90591 both dated September 24, 1990, documented the identification and disposition of the penetration. The licensee promptly sealed the penetration. The NCR and drawing E-1315, "Conduit and Cable Trays Symbols, Notes and Details," Item 27, provided instructions that addressed installation of a polyurethane foam sealant. No concerns were identified by the inspector during review of the above documentation or inspection of the sealed penetration.

2.2 Inadvertent Unit 3 Core Spray Pumps Start

On October 9, 1990, with Unit 3 at 100% power, both the A and C core spray (CS) pumps inadvertently started during surveillance testing. The CS pumps did not inject water to the reactor vessel because the inboard injection valve was closed and jumpered to prevent opening. Operators immediately shut down the pumps. A 4 hour emergency notification system (ENS) phone call was made to the NRC.

Surveillance Test (ST) 1.4, "Core Spray A Logic System Functional," Revision 29, step 36, required rotating a test switch from position E-F, to D-E, to A-C (counter clockwise). The test engineer mistakenly rotated the switch in the opposite direction to position D-F. This action caused the CS pumps to start.

The inspector determined that the procedure steps describing the required action was clear. A note in the front of the procedure also stated to perform position transfer only in the manner specified. In the past, system engineers performed this ST. Responsibility for performance of various STs was recently transferred to the Maintenance Section. The licensee interviewed the individual who stated that he mistook position D-F for D-E. Also, he believed that the test switch could only be rotated in the clockwise direction. A job prebrief was not held, the individual had never performed this ST before, and he was not aware that his actions could cause actual system responses. The Maintenance/I&C Supervisor stated that the assignment of the logic system functional STs had been reevaluated. This responsibility has been transferred to the I&C Section and appropriate training was conducted on use of the switch. The inspector observed performance of subsequent STs by I&C and had no further questions.

2.3 Accidental Opening of a Unit 3 Breaker

On October 24, 1990, a non-licensed operator accidentally opened the E-424-T-B breaker while blocking the Unit 3 D residual heat removal pump. The operator stood up near a breaker panel and caught his radio on the breaker handle. As a result of the breaker opening, power was lost to panel 00Y03. Control room ventilation tripped, a Unit 2 ventilation stack hi-hi radiation alarm and a Unit 3 containment hi radiation alarm annunciated, and backup nitrogen to the Unit 2 and Unit 3 automatic depressurization systems (ADS) isolated.

The operator immediately re-energized the breaker. Licensed operators restored control room ventilation and backup nitrogen to the ADS. Both high radiation alarms could not be reset. I&C personnel cleaned several connectors, replaced a fuse and reset the alarms. The inspector had no further questions. The licensee will submit an LER for this event.

3.0 LICENSEE ATTENTION TO DETAIL TASK FORCE EFFORT (71707)

NRC inspection reports and the most recent SALP Report noted continuing problems with personnel inattention to detail. This less than adequate care in performance of activities resulted in engineered safety feature actuations, missed surveillance tests, maintenance rework and other problems. This issue is keenly understood by licensee senior management, including the Peach Bottom Plant Manager.

In order to establish a better understanding of the factors underlying the problem the Plant Manager established a task force to evaluate the area. The task force is comprised of individuals from all levels of the plant staff, craftsman through department management. Membership also includes representatives from QA, ISEG and the Limerick facility. The task force reviewed LERs, NRC inspection reports, SALP reports, ISEG reports, QA audits, INPO reports, Nuclear

Review Board meeting minutes, In-House Event Investigation reports and other relevant documents. From this review conclusions were drawn regarding the contributing root causes for the personnel performance issues described.

The task force concluded that weaknesses affecting the performance of activities were present at each level of the plant staff and management. No one weakness resulted in the errors. Rather the cumulative effect of worker approach and attitude, first line supervisory involvement, middle management direction and guidance and senior management sponsorship were all contributors. The task force developed a model of the roles of the worker, supervision and management in assuring quality work activities and provided recommendations for improving performance at each level. The Plant Manager conducted several meetings with the site Superintendents and Senior Engineers to discuss the results of the task force effort, and to solicit assistance in carrying the program forward.

The inspectors reviewed the results of the task force effort, discussed them with members of the licensee staff and attended portions of the meetings conducted by the Plant Manager. This effort appears to be well directed and represents a significant positive step by the licensee. Implementation of actions to correct the weaknesses noted will continue to be monitored by the inspectors.

4.0 REACTOR WATER LEVEL EVENTS (71707)

During the period covered by Resident Inspection 90-17 the licensee experienced two events in which reactor vessel water level monitoring instrumentation was found to be set outside the allowable limits specified in the Technical Specifications (TS). These events were identified as potential violations and as candidates for escalated enforcement action. An Enforcement Conference was held in NRC Region I on October 26, 1990, to discuss the events. A final decision regarding the appropriate enforcement action had not been made prior to the close of this inspection period. Additional licensee and inspector review following Inspection 90-17 identified additional relevant information.

In October, 1989, Unit 3 level transmitters LT 99C & D were calibrated by the same personnel, on the same day using the same test equipment. In December, 1989, these two instruments were flagged by the operations staff as reading high and outside the allowable range. During the next nine months a series of maintenance request forms (MRF) were initiated in response to the higher than normal indication. In each case evaluations were performed by individuals from either maintenance planning or I&C. It appears that the responsible system engineer was not involved in this follow-up. The MRFs were either canceled or placed into the mid-cycle outage work list. In response to an operations staff request in August 1990, I&C engineers performed an investigation and concluded that the instruments were reading conservatively low. Following a Unit 2 water level instrumentation event in late August 1990 a second investigation was initiated and concluded that LT 99C and D were indicating non-conservatively high and potentially outside the TS setpoint.

Preliminary information contained in Inspection Report 90-17 indicated that the instruments were indicating about ten inches high, and were beyond the TS limit but still functional. In fact, as-found data confirmed that they were out of calibration in the non-conservative direction such that a reactor vessel level of -178 inches would have been required to initiate the trip of these instruments, rather than the TS limiting value of -160 inches. The variable leg tap for the wide range level instruments is located at -172 inches. Therefore, the sensed water level could not reach -178 inches and the instruments would not have functioned.

It appears that in this case the licensee's process for review and disposition of MRFs, including cancellation and prioritization, allowed the problem to exist for an extended time without proper evaluation. When the I & C engineering evaluation was initiated it was conducted without full knowledge of the instrument response characteristics, leading to an incorrect conclusion. Additional factors which complicated this event included: 1) instrument channel check procedure adequacy; 2) wide range instrumentation response to recirculation flow changes and licensee staff knowledge of this behavior and 3) accuracy and readability of indicators used for performance of channel checks. These issues were addressed by the licensee during the Enforcement Conference.

5.0 INSERVICE TEST PROGRAM REVIEW (73756)

5.1 Inspection Scope and Overall Conclusions

10 CFR 50.55a(g) requires implementation of an Inservice Testing (IST) program for pumps and valves whose function is required for safety, established in accordance with the applicable edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (B&PV), Section XI. The applicable edition of the Code for the purpose of the IST program is the 1980 Edition through Winter of 1981 addenda. During the period the inspectors performed a review of the licensee's Inservice Testing Program for pumps and valves which included a review of the applicable edition of the Code, the licensee's IST program submittal, controlling administrative procedures, test procedures and data collection and review processes.

The licensee's program submittal clearly describes their approach to implementation of the IST program. The program outlined in the submittal has been transferred directly into Administrative Procedure A-127, "Inservice Testing Program." Procedure A-127 includes requirements for establishment of IST acceptance criteria, selection of instrumentation and the relationship of IST data to component and system operability. The licensee has assigned a member of the technical staff to coordinate maintenance of the IST program and review and disposition of program test results.

The inspector selected a representative sample of safety-related components as the focus for evaluation of program effectiveness. This sample included the Unit 2 core spray (CS) system pumps and valves, the Unit 3 residual heat removal (RHR) system pumps, and a sample of valves associated with other systems. For the components selected the inspector reviewed testing requirements listed in the program plan, the consistency of testing with the Code, the

technical adequacy of the test procedures, acceptability of the instrumentation used for data collection and two years of test data. Based on this evaluation the inspector reached the following general conclusions:

- clear guidance has been established relative to the scope and implementation of the program;
- acceptance criteria and ranges ha been established consistent with the Code and Technical Specifications, and have en translated directly into component test procedures;
- a process is in place to ensure proper post-test data review, initiation of accelerated testing if required and data trending;
- licensee staff exhibit a questioning attitude and have made program improvements in the quality of the program during the past year.

In general the licensee has implemented the basic facets of an effective IST program. However the inspector did identify several program deficiencies and weaknesses.

5.2 Discussion of Inspection Findings

During the review the inspector identified several areas in which the licensee had not adequately transferred testing requirements contained in Section XI and the IST program document into implementing administrative and technical procedures. Following is a description of these inadequacies:

- Section XI, Article IWV 3410, of the ASME B&PV Code requires that Category A and B valves be exercised every three months unless it is not practical with the plant in operation. In that case the valves must be exercised during cold shutdowns if three months have elapsed since the previous exercise. The IST program description, Section 5.2.2, "Cold Shutdown Valve Testing," describes their approach to implementation of this requirement. The valves designated for cold shutdown testing are addressed in the following surveillance test procedures:

  ST 6.15-2(3), "Recirc. Pump Discharge Valve Operability MO-2-02-53A & B;"

  ST 16.18-2(3), "IST Valve Exercise;"

  ST 13.47-2.1(3.1), "Cold Shutdown IST Exercise of Secondary Containment Dampers;"

  ST 10.19, "CRD Accumulator Charging Header Check Valve Test,"

  ST 10.21, "Main Steam N2 Accumulator Check Valve Inservice Test."

ST 6.15-2(3) is required to be completed prior to startup from cold shutdown by TS and has been completed. ST 6.18-2(3) and ST 13.47-2.1(3.1) are contained as line items in the startup procedure, GP-2, but completion is not mandatory. In many cases they have either been only partially completed or not conducted. The remaining two procedures, ST 10.21 and ST 10.19, are unscheduled and were only completed on Unit 3 prior to plant restart from the last refueling outage. Administrative control or oversight has not been implemented to ensure that the testing is conducted during appropriate periods of cold shutdown, and that if partial tests are performed that the remaining valves are tested during the next cold shutdown. As a result, these test procedures were not implemented adequately during periods of cold shutdown on either unit since restart in 1989. Discussions with the licensee staff indicated that they were aware of this weakness, but that no resolution had been reached.

- Section XI, Article IWV 3510, requires the periodic testing of safety and relief valves within the scope of the IST program. In the event that test failures occur the Code requires expansion of the test sample to include additional valves. ANSI/ASME OM-1-1981, an alternate approach to this testing, also contains similar requirements. The licensee's program does contain an appropriate test schedule for safety and relief valves, but no provisions have been established to ensure implementation of the expanded testing following a test failure. The licensee agreed that the program administrative controls were not adequate in this respect. At the close of the inspection period the licensee had initiated a review of maintenance and testing history to determine if this program inadequacy had resulted in actual missed testing requirements. The licensee also stated that the program and schedule for relief valve testing would be established in a maintenance administrative procedure.

- Section XI, Article IWV 3410, requires that Category A and B valves be exercised at least once every three months and that valve disk movement be determined by observation of direct or indirect evidence. The licensee's IST program requires quarterly verification that the core spray (CS) pump and the residual heat removal (RHR) pump minimum flow line check valves open on initiation of flow. The licensee relies on procedures 6.6F-2(3), "Core Spray A Loop Pump, Valve, Flow and Cooler Test - Unit 2(3)," 6.7F-2(3), "Core Spray B Loop Pump, Valve, Flow and Cooler Test - Unit 2(3)," 6.8F-2(3), "Unit 2(3) A RHR Loop Pump, Valve, Flow and Unit cooler Functional Flow Test," and 6.9F-2(3), "Unit 2(3) B RHR Loop Pump, Valve, Flow and Unit Cooler Functional Flow Test" to complete this requirement. Review of the effective revision of these implementing procedures identified that they do not perform an adequate test, and valve opening is not verified. The current test starts each pump and only verifies that the motor operated minimum flow valve opens. Verification that the motor operated valve opens does not mean that the downstream check valve has fully opened. No direct position indication is available, and no alternate indirect method of verifying valve stroke has been developed. When the inspector raised this issue with the licensee staff they stated that they had identified the deficiency immediately prior to the inspectors questioning and planned to implement corrective action.

The inspector informed the licensee that the above three examples of failure to adequately implement provisions of the IST program as required by 10 CFR 50.55a(g) and the ASME B&PV Code, Section XI (1980 Edition through Winter of 1981 addenda), constitute a violation of NRC requirements (NV4-90-18-01).

In addition to the deficiencies listed above, the inspectors identified the following weaknesses or outstanding questions:

- The inspector identified that the quarterly IST Surveillance Test ST 6.6F-2, "Core Spray A Loop Pump, Valve, Flow, and Cooler Test - Unit 2," was completed in November 1988 and again in May 1989. In April 1989 only a partial test was performed and several valve tests were not completed. The valve tests were not completed prior to the Unit 2 plant startup in April 1989. This error was apparently due to improper coding of the partial April test by the ST Coordinator. The test was coded "Unsat-Complete" which implies that the all testing was complete and that retest of the unsatisfactory portions are tracked via a maintenance request. It should have been coded as "Unsat-Partial" to track testing completion for the unperformed portions. The licensee initiated an Event Investigation (EI) to evaluate this error and will issue a Licensee Event Report (LER) describing the incident. In response to NRC unresolved item 90-10-002 concerning repeated licensee failures to complete surveillance testing on the required schedule, the licensee performed a root cause analysis. Incorrect coding of test results was not identified as a contributor. The EI and LER will ensure root cause analysis of this incident.

- The inspector noted that some instrumentation used for IST program data collection does not meet the accuracy and range requirements of the Code. The CS and RHR suction pressure gauges are examples. No relief request addressing this area had been submitted by the licensee. When questioned concerning this issue the licensee staff acknowledged that the condition existed and demonstrated that it had been previously identified. The licensee provided Nonconformance Report P90382 describing the problem and a list of instruments used by IST with their accuracies and ranges. The licensee stated that their engineering organization is evaluating the issue and will provide a response outlining the action to be taken. The licensee is clearly acting to resolve this problem.

- The inspector noted that the high pressure coolant injection and reactor core isolation cooling system injection check valves are listed in the IST program as Category C valves and no leak testing is performed. In addition, the IST program does not require testing to verify that the valve seats on reversal of flow. The suction piping for these systems is low pressure. The injection check and the upstream motor operated valve separate this low pressure piping from the feedwater system. These same two valves plus the inboard feedwater check valve separate this piping from the reactor coolant system. However, the inspector noted that initiation of the system followed by a high water level trip would result in the motor operated valve remaining open with the system not operating. In this case the check valve could be challenged. The inspector questioned if reverse flow or

leak testing of these check valves should be implemented. In response the licensee initiated an Engineering Work Request (EWR) to evaluate the designation.

- The inspector noted that the check valves in the nitrogen supply line to the automatic depressurization system (ADS) accumulators were designated as Category C valves (no leak testing required). These valves must be leak tight to support the function of these accumulators as described in the UFSAR. The licensee does perform a test to verify seating on reversal of flow. This test is accomplished by verifying that the valve does not pass leakage in excess of 60 cc/minute at 90 psig. The inspector requested the analysis used to select this acceptance criteria. The licensee initiated an EWR to evaluate if the valves should be designated as Category A/C, and to locate the basis for the leakage acceptance criteria.

The licensee response to the four issues and questions discussed above will remain unresolved and will be evaluated during a future inspection (UNR 90-18-002).

It appears that while the IST program is generally effective, weaknesses in implementation of the program exist. Some of these weaknesses had been identified by the licensee. Corrective action had been initiated for some but not all of the problems. Action to assess the current status of IST program implementation and to identify and schedule needed improvements may be warranted.

5.3 Vibration Monitoring Program Review

The inspectors also reviewed the licensee's vibration monitoring program. The Code requires measurement of vibration using displacement. The licensee's program includes an exemption request to allow measurement of vibration using velocity. The licensee's June 1988 letter transmitting the revised IST program committed to full implementation of the program by May 1, 1989. The inspector noted that the licensee did initiate this transition in the spring of 1989, but consistent measurement of vibration using velocity was not evident until March 1990. In this case the licensee did not fully meet the commitment contained in the transmittal letter. Subsequently, the licensee completed the transition and currently the program appears to be well established.

Prior to 1990 vibration data collected in support of the IST program indicated that consistency was a problem, making trending difficult. This was recognized by the licensee and in response, the licensee transferred responsibility for data collection from operations to the rotating equipment group in the maintenance organization. This group is staffed with individuals who have developed substantial expertise in this area. The group collects all vibration data required by the IST program. Additionally, the group performs augmented monitoring of components included in the IST program, and monitoring of over 300 pieces of rotating equipment not covered by IST. This supplemental monitoring has been instrumental in early identification of equipment degradation, and diagnosis of design problems which result in higher than desired vibration levels. The group's laboratory is well equipped and personnel are knowledgeable. The licensee

plans to transfer responsibility for collection of IST and post-maintenance vibration data from the rotating equipment group to the maintenance craft following implementation of craft training. This is intended to allow more effective use of the group's resources. The inspector considered the licensee's vibration monitoring program to be a strength.

6.0 SURVEILLANCE TESTING REVIEW (61726, 71707)

The inspectors observed surveillance tests to verify that testing had been properly scheduled, approved by shift supervision, control room operators were knowledgeable regarding testing in progress, approved procedures were being used, redundant systems or components were available for service as required, test instrumentation was calibrated, work was performed by qualified personnel, and test acceptance criteria were met. Daily surveillances including instrument channel checks, jet pump operability, and control rod operability were verified to be adequately performed. The following tests were observed during the inspection period:

ST 1.7-3, "RHR Logic B System Functional Test," Revision 3, October 23;

ST 9.1-2X, "The Surveillance Log," Revision 20, various performances;

ST 16.22, "Fire Damper Inspection," Revision 6, October 11;

ST 13.7A, "SGTS Filter Differential & Heater Capacity," Revision 7, October 15,

No concerns were identified. In addition, a significant number of Inservice Testing Program test procedures, results and observations were performed. The results of this inspection were discussed in Section 5.0.

7.0 MAINTENANCE ACTIVITY OBSERVATIONS (50095, 62703, 71707)

7.1 Routine Observations

The inspectors reviewed administrative controls and associated documentation, and observed portions of ongoing work. Administrative controls checked included blocking permits, fire watches and ignition source controls, QA/QC involvement, radiological controls, plant conditions, TS LCOs, equipment alignment and turnover information, post-maintenance testing and reportability. Documents reviewed included maintenance procedures, maintenance request forms (MRF), item handling reports, radiation work permits (RWP), material certifications, and receipt inspections. The following maintenance activities were observed:

MRF 90006601 Replace Mechanical Seal on 3A Fuel Pool Service Water Booster Pump;

MRF 89006838 Flush Hot Spot in RCIC Discharge Check Valve Equalizing Line;

MRF 90061818 Inspect Heater Connections on Standby Gas Treatment System;

MRF 90006607 SBGT, Replace Charcoal Filter Cartridge on Standby Gas Treatment System.

No concerns were identified.

7.2 Installation of Spent Fuel Racks in Unit 3

On August 13, 1990, a diver was utilized to correct a misaligned lifting apparatus on a spent fuel rack in the Unit 3 spent fuel pool (SFP). The Mobile Maintenance Group, Nuclear Maintenance Department (NMD), was installing the more compact racks to increase the capacity of the SFP. Unit 2 was reracked in 1985 without incident using divers to place floor supports and the lifting apparatus. For Unit 3 the use of divers was minimized by redesigning the lifting apparatus so that removal could be accomplished remotely.

The first rack was placed in the pool successfully with remote handling tools as designed. To level the rack three of the four lifting points are released and the lifting apparatus raises one side of the rack to take tension off the leveling pad for adjustment. During the leveling of the second rack, the crane lifted the apparatus too high when a rigger gave poor hand instruction to the crane operator. The rack shifted and contacted an adjacent rack. A diver was sent into the SFP to reconnect the lifting apparatus, then the rack was lifted to the correct position. However this lift did not go well and the diver was again used to correct the lifting apparatus. Finally the spent fuel rack was correctly located and leveled but the lifting pins could not be removed remotely because one of the lifting pins had been jammed. The diver was sent in to unjam the lifting pin. This evolution was held up because of Operations Health Physics (HP) concerns about the need for so many dives and if this dive would finally resolve the problem. A meeting was held between NMD and HP to discuss the evolution. As a result a decision was made that other preparation work should be continued but that further installation work would be suspended until design and installation methods were reviewed and discussed, and a new ALARA review completed. After this was done, the activity resumed.

The inspector noted that the change in design to minimize diver work was a good initiative in view of the hazards involved and problems with diver exposures at other sites. Activity implementation problems, however, reduced the benefits of this initiative.

8.0 RADIOLOGICAL CONTROLS (71707)

8.1 Routine Observations

During the report period, the inspector examined work in progress in both units and included health physics procedures and controls, ALARA implementation, dosimetry and badging, protective clothing use, adherence to radiation work permit (RWP) requirements, radiation surveys, radiation protection instrument use, and handling of potentially contaminated equipment and materials.

The inspector observed individuals frisking in accordance with HP procedures. A sampling of high radiation area doors was verified to be locked as required. Compliance with RWP requirements was verified during each tour. RWP line entries were reviewed to verify that personnel had provided the required information and people working in RWP areas were observed to be meeting the applicable requirements. No unacceptable conditions were identified.

8.2 Conduct of Diving Operations

On August 13 and again on September 18, 1990, the inspector observed the diving activities in Unit 3 SFP to support the installation of the new racks (see Section 7.2). The inspector reviewed the underwater surveys of the radiation fields, the ALARA review, and the RWP. In addition, the inspector attended the pre-job review and observed the diving activities. The inspector noted that: the underwater surveys were of very high quality; the pre-job briefing was of excellent depth and quality which clearly emphasized the seriousness and threat to diver safety in underwater radiation fields; utilized excellent underwater radiation monitors; more than sufficient controls on the divers to limit motion were implemented; and very good dosimetry placement was evident including two radiation monitors which read at a remote observer location. The observers could directly communicate with the diver via radio. The dives resulted in assigned doses of about 10 mrem wholebody for each dive.

9.0 PHYSICAL SECURITY (71707)

The inspector monitored security activities for compliance with the accepted Security Plan and associated implementing procedures, including: security staffing, operations of the CAS and SAS, checks of vehicles to verify proper control, observation of protected area access control and badging procedures on each shift, inspection of protected and vital area barriers, checks on control of vital area access, escort procedures, checks of detection and assessment aids, and compensatory measures. No inadequacies were identified.

10.0 PREVIOUS INSPECTION ITEM UPDATE (71707, 92702)

(CLOSED) UNR 87-32-005; No Full Stroke Exercise for Valve VV-23-61.

During inspection 87-32 the inspector identified that the licensee was not performing full stroke exercising of valve VV-23-61 as required by the ASME Code. No relief request had been submitted on this component. This item was subsequently updated in inspection report 89-06. Since this item was opened the licensee has revised and resubmitted the IST program for Peach Bottom. This revised program includes a relief request which specifies that the valves will be partial stroke tested quarterly and disassembled and inspected during each refueling outage. Evaluation of the acceptability of this position is being conducted as part of the NRC review of the licensee's program submittal. Based on the above this item is closed.

(CLOSED) UNR 87-32-008; Full Stroke Testing of Testable Check Valves.

During inspection 87-32 the inspector identified that the air operators installed on the emergency core cooling and reactor core isolation cooling system injection check valves were not capable of lifting the valve through a full opening stroke. No relief request had been submitted on these components. This item was subsequently updated in inspection report 89-06. Since this item was opened the licensee has revised and resubmitted the IST program for Peach Bottom. The revised program includes a relief requests for each valve which specify that the valves will be partial stroke tested during periods of cold shutdown and disassembled and inspected during each refueling outage. Evaluation of the acceptability of this position is being conducted as part of the NRC review of the licensee's program submittal. Based on the above this item is closed.

(CLOSED) UNR 88-28-001; Update Procedure A-20 and Provide Administrative Procedure for Routine Tests Including Method to Verify Procedure Function as Written.

This item related to updating Administrative Procedure A-20 to ensure that the procedure could be implemented as written. The concern was that organizational responsibility for control and updating of alarm response cards had not been established. An additional concern was identified on the use and control of routine tests. The inspector reviewed A-20, "Generation, Revision, and Implementation of Operating Procedures (System S), System Operating (SO), Abnormal Operations (AO), General Plant (GP), Alarm Response Cards (ARC)," Revision 5; A-1, "Administrative Procedure Preparation," Revision 7; A-130, "Routine Test Procedures," Revision 1, and A-36, "Periodic Review of Procedures," Revision 13. Procedure A-36, Revision 13 was issued on May 1, 1990, and specifically defines organizational responsibility to perform periodic review of procedures. A-130 provides administrative requirements for the use and control of routine tests. Organizational responsibility for the control and updating of alarm response cards has been delegated to the Operations Support Group as specified in paragraph 6.2 of A-20. Based on the above, the inspector determined that licensee actions adequately resolve this item.

(UPDATE) Violation (277/90-14-01); Licensed Operators Failed to Follow Procedures When Resetting a Control Room Emergency Ventilation System Actuation.

The procedure for resetting a control room emergency ventilation system actuation required securing the normal supply and exhaust fans prior to reset of the trip signal. Operators did not follow the procedure. Therefore, when the engineered safety feature (ESF) actuation signal was reset, the normal ventilation fans restarted.

IE Bulletin 80-06, "ESF Reset Controls," required that licensees modify safety-related systems to prevent equipment from automatically returning to its normal mode following reset of an ESF actuation signal. In their response to the Bulletin, the licensee stated that for some systems procedural controls would be used in lieu of hardware modifications. This approach was accepted by the NRC. In accordance with their response, the licensee implemented procedural controls on the following systems:

- o standby gas treatment;
- o control room ventilation;
- o reactor building/refuel floor ventilation, and
- o high pressure coolant injection.

Since the connection between the Bulletin response and resetting the control room emergency ventilation system was lost over time, the licensee performed a review of the other commitments contained in the response. Numerous procedures were reviewed. The procedures contained appropriate actions but did not reference the Bulletin. The licensee commited to revise the procedures to reference Bulletin 80-06 by November 21, 1990.

The inspector determined that appropriate procedures were reviewed by the licensee. Applicable procedures are listed in Attachment II and they meet the intent of Bulletin 80-06. This item will remain open pending further review of the other issues contained in the violation.

11.0 MANAGEMENT MEETINGS (30703)

The Resident Inspectors provided a verbal summary of preliminary findings to the Peach Bot. Station Plant Manager at the conclusion of the inspection. During the inspection, the Resident Inspectors verbally notified licensee management concerning preliminary findings. No written material was provided to the licensee during the inspection. This report does not contain proprietary information. The inspectors also attended the exit interview for the following inspection during the report period:

Dates	Subject	Report No.	Inspector
9/17-10/3	SSFI Followup Inspection	90-80	Lyash

ATTACHMENT I

Facility and Unit Status

Unit 2

9/24-9/29	Reactor power limited to 80% due to high feedwater copper concentration
9/30	Power reduced to 60% for condenser water box leak testing
10/3	Reactor at 100% power
10/15	Power reduced to 85% for rod pattern adjustment, then returned to 100%
10/20-10/21	Power reduced to 60% for rod pattern adjustment, then returned to 100%
10/24	Reactor power remained at 100% to end of period

Unit 3

9/24-10/13	Reactor at 100% power
10/14	Power reduced to 85% to perform a modification acceptance test
10/15-10/23	Reactor at 100% power
10/24	Power reduced to 80% due to recombiner problems
10/25-10/27	Power remained at 80% until shutdown for the mid-cycle outage on 10/27

ATTACHMENT II

Applicable Procedures for Bulletin 80-06

ON-115	Loss of Main Control Room Ventilation
GP-8.B	PCIS Isolations - Group II and III
GP-8.B COL	Groups II and III Isolation Check-off List
GP-8.C	Groups I, II, and III Inboard Isolation
GP-8.C COL	Groups II and III Inboard Half Isolation
GP-8.D	Groups I, II, and III Outboard Half Isolation
GP-8.D COL	Groups II and III Outboard Half Isolation
SO-1G.7.B-2(3)	Automatic Depressurization System Timer Reset Prior to Blowdown
SO-1G.7.C-2(3)	Automatic Depressurization System Reset Following Blowdown
SO-9A.1.C	Response to Standby Gas Treatment System Automatic Start
SO-9A.2.A	Standby Gas Treatment System Shutdown Following an Automatic Start
SO-23.2.A-2(3)	High Pressure Coolant Injection System Shutdown
SO-40D.7.A	Restoration of Control Room Ventilation Following a High Radiation Trip
SO-40D.7.B	Place Control Room Ventilation Emergency Ventilation in Service From the Control Room
SO-60E-7.A-2(3)	Traversing In-Core Probe System Isolations in Event of Containment Isolation

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SO-60E-7.A-2(3)	Traversing In-Core Probe System Isolations in Event of Containment Isolation